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ABSTRACT

This bibliography is divided into three general categories: (1) information storage and retrieval theory; (2) computer-based systems in education; and (3) computer-based systems in guidance and counseling. The latter comprises, by far, the bulk of the bibliography and contains general works, monographs, periodicals, micro-prints, government publications, and unpublished works. In addition, there is a separate section of entries published by the Information System for Vocational Decisions (ISVD) which is a project under the combined direction of the Harvard Graduate School of Education, the New England Educational Data System, and the Newton (Mass.) Public School System. Thirty-six project reports are included. (TL)

ED 046006

Computer Based Systems

in

Guidance and Counselling

An Annotated Bibliography

A. Information storage and Retrieved Theory.

1. General Works
2. Monographs

B. Computer Based Systems in Education.

1. General Works
2. Monographs
3. Periodicals
4. Micro-print

C. Computer-Based Systems in Guidance and Counselling.

1. General Works
2. Monographs
3. Periodicals
4. Micro-point
5. Government Publications
6. Unpublished works

C_1 ISUD Publications.

1. Annual Reports
2. Technical Memoranda
3. Project Reports

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I - INTRODUCTION

The review of literature here presented is in the form of an annotated bibliography rather than being a critical appraisal of the works included.

The literature is divided into four categories. The first, "Information Storage and Retrieval Theory", includes some selected references on general information-system theory. Most of these are from the field of Library Science since it is in this area that the greatest advances are being made.

Secondly, the section entitled "Computer-Based Systems in Education" presents an extensive coverage of works dealing with educational, computerized information systems. It does not, however, include to any extent studies relating to computer-assisted instruction, or fundamental electronic data processing.

Section C, "Computer-Based Systems in Guidance and Counselling", is an exhaustive review of all relative literature obtained by the writer.

Publications of the Harvard-NEEDS-Newton Information System for Vocational Decisions (ISVD) are treated separately (Section C-1), while actually a sub-category of Section C. This has been done because the ISVD project is the most ambitious and significant contribution to the use of information systems in the counselling area; and, secondly, because of the wide scope of ISVD publications within and beyond the field.

A. INFORMATION STORAGE AND RETRIEVAL THEORY

1. General Works

Becker, J. and Hayes, R.M. Information Storage and Retrieval: Tools, Elements, Theories. New York, John Wiley, 1963.

While a product of information retrieval in the field of Library Science, this book attempts an overview of the interdisciplinary nature of information storage and retrieval. The contents are divided into three sections dealing with:

a) Techniques and languages of computer processing,
b) Elements and usage, and
c) Theories of file organization and systems design.

An extensive listing of periodicals and journals relating to information storage and retrieval is given.

Borko, H. (ed.). Computer Applications in the Behavioral Sciences. New Jersey, Prentice-Hall, 1962.

This work is organized in three sections:

a) A discussion of the role of computers in the behavioural sciences, data-processing history, and computer applications and principles,
b) A technical description of computer systems and languages, and an introduction to programming principles and
c) A wide variety of applications.

References are given at the end of each chapter, and a well developed glossary is included.

Bourne, C.P. Methods of Information Handling. New York, John Wiley, 1963.

An excellent overview of information handling from the basics of information organization, through coding and notations, manual systems, micro-image systems, and finally computer-based systems.

The work is well documented and illustrated.

Elliott, C.O. and Wasley, S.W. Business Information Processing Systems. Illinois, R.D. Irwin, 1968.

The authors assume a basic knowledge in business and accounting in their presentation of information processing systems used in business in 1968. Topics covered include: basic data-processing, technical terminology, available systems and equipment, utilization and management of data produced, control functions, and problems of conversion to electronic data-processing.

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A. INFORMATION STORAGE AND RETRIEVAL THEORY ... 02

1. General Works - Elliott (cont'd.)

Chapters 10 through 21 give a good historic development of computing devices and a detailed but simple explanation of computer components and their functions.

An extensive glossary of specialized terms is included.

Lancaster, F.N. Information Retrieval Systems: Characteristics, Testing, and Evaluation. John Wiley, New York, 1968.

This book deals with the theoretical factors effecting the performance of information retrieval systems, including: indexing policy and practice, vocabulary control, searching strategies, and interaction between the system and its users. It deals mainly with document searching and retrieval as applied to libraries.

Meadows, C.T. The Analysis of Information Systems: A Programmer's Introduction to Information Retrieval. New York, John Wiley, 1967.

While oriented toward Library Science, this book does provide a practical outline of the organization and storage of information.

Part I - Information Retrieval and Communication emphasizes the human communication aspect of such systems, including language, indexing, and searching.
Part II - Organization of Information explains how information is organized for storage and retrieval in computer-based systems.
Part III - Processing of Files and File Sets outlines machine processing.

2. Monographs

Borko, H. The Conceptual Foundations of Information Systems. Santa Monica, System Development Corp., 1965.

A Straightforward, non-technical, basic introduction to information storage and retrieval concepts. Seven concepts are enunciated. These deal with the needs, equipment/user responsiveness, language processing, indexing, classification, and storage situations.

B. COMPUTER-BASED SYSTEMS IN EDUCATION

1. General Works

Atkinson, R.C. and Wilson, H.A. (eds.). Computer-Assisted Instruction. New York, Academic Press, 1969.

A book of twenty-one readings, divided into four categories: The Role of Computer-Assisted Instruction, Educational Considerations,
Applications of Computer-Assisted Instruction, and Hardware, Languages, and Economics.

Although the book contains many very interesting articles, they are only tangentially related to information storage and retrieval.

B. COMPUTER-BASED SYSTEMS IN EDUCATION

1. General Works (cont'd.)

Bushnell, D.D. and Allen, D.W. The Computer in American Education. New York, John Wiley, 1967.

A collection of papers presented at a November 1965 conference on digital computers in education, sponsored by the Association for Educational Data Systems.

The papers are presented in four chapters:
- Individualized Instruction and Social Goals,
- Computers in Instruction and Research,
- Teaching the Computer Sciences, and
- Information Processing for Educational Systems.

There is no material specifically related to the field of Guidance and Counselling.

Goodlad, J.I. Computers and Information Systems in Education. Saddle Brook, Harcourt, Brace and World, 1966.

This is an attempt to increase the awareness of educators about the potential of electronic data processing in education, and to acquaint the EDP specialist of current educational administration and student accounting are discussed as well as innovative uses of EDP in instruction.

An appendix describes twenty-seven EDP educational projects in existence in 1966.

Goodman, E.H. (ed.). Automated Educational Handbook. Detroit, Automated Education Centre, 1965.

As well as providing a general overview, the handbook includes sections dealing specifically with Programmed Instruction, Language Laboratories, Computerized Educational Technology, Administration, and Curriculum. Several articles relate somewhat to Guidance and Counselling.

Specific bibliographies are presented with each of the above mentioned sections.

Grossman, A. and Howe, R.L. Data Processing for Educators. Chicago, Educational Methods Inc., 1965.

This study presents the concept of school information systems in a clear, concise, and logical manner. In a manner designed specifically for educators, the following are included:
- an overview of the relationship of information systems to education,
- an historic development of the technology itself,
- a description of machines and machine functions,
- a detailed look at systems in the study, design, and implementation stages,
- a discussion of typical educational applications,
- a potential for education, and
- a comprehensive glossary.

B. COMPUTER-BASED SYSTEMS IN EDUCATION

1. General Works (continued)

Loughary, J.W. (ed.). Man-Machine Systems in Education. New York, Harper and Row, 1966.

A collaboration of the work of seven specialists concerned with increasing the intimacy of relationship between machines and pupils and teachers. The book relates three general concerns - to appreciate the impact that machines can make in education, to understand something of the nature of man-machine systems, and to gain a feel for the applications which can be made of such systems in education.

Part V specifically deals with the use of information systems in the pupil personnel services.

In discussing auxillary personnel, the authors point out a need for four types of specialists as a support team for teachers - Content Research Specialists, Media Specialists, Systems Specialists, and Engineer.

Silberman, H.F. and Launor, F.C. "The Systems Approach to Technology and the School". Automated Education Handbook, Goodman, E.H. (ed.), Detroit, Automated Education Centre, 1965.

This article gives a general overview of computer based systems in the schools, including a brief section entitled "Computer Based Counselling".

Whitlock, J.W. Automatic Data Processing in Education. New York, MacMillan, 1964.

This work begins with an overview of data processing applications in education, and briefly outlines the concept of data processing systems. Detailed outlines are given for the use of such systems in student personnel accounting and school business and personnel functions. The work concludes with considerations for the installation of a school data processing system.

An extensive bibliography is included on works related to computer-based accounting procedures in education.

2. Monographs

Borko, H. and Bushnell, D.D. "Information Retrieval Systems in Education". Automated School Information Systems, Bushnell, D.D. (ed.), Washington, National Education Association, 1964, pp. 53-60.

An adaptation of a paper presented at the American Psychological Association Convention, St. Louis, September, 1962.

Generally discusses information retrieval systems in education and develops the idea of an information system centre to serve a local school network. Particular attention is given to the use of systems in educational management and research.

B. COMPUTER-BASED SYSTEMS IN EDUCATION

2. Monographs (cont'd.)

Bushnell, D.D. (ed.). Automated School Information Systems. Washington, National Education Association, 1964.

A collection of over thirty papers relating to computer systems in education, presented in six chapters.

1 - EDP and School Administration
2 - The Automation of Scheduling Procedures
3.- The Retrieval of Educational Information
4 - Simulation and Modelling for Educational Decision Making
5 - Computer-Based Instructional Systems
6 - Systems Design and Analysis

Selected papers in Chapter three are of particular significance.

3. Periodicals

Bushnell, D.D. "Information Retrieval Systems and Education". Society for Automation in Business Education, (June 1963).

Not available for review.

Goldwyn, A.J. "Information Retrieval: The Man-Machine Interface". Data Processing for Education, vol. 2 (November 1963).

Not available for review.

Grossman, A. "Proposed: An R and D Centre for Education Data Processing". Datamation, vol. 8 (October 1962), pp. 47-49.

This article proposes a Research and Development centre designed to develop and demonstrate an effective education information system. Grossman outlines seven functions of such a centre.

Grossman, A. and Howe, R. "Human Economy and Data Processing". Personnel and Guidance Journal, vol. 43 (December 1964), pp. 343-347.

The authors present a discussion of data processing systems in the schools from the point of view of the economy found in saying valuable professional time, energy, and skill. Eight ways of effective utilization are outlined, and several avenues of increased efficiency are described.

B. COMPUTER-BASED SYSTEMS IN EDUCATION

3. Periodicals (cont'd.)

Guertin, W.H. "Straight talk about Computer Information Systems". Educational Technology, vol. 9 (August 1969, pp. 25-30).

In a discussion of the purposes of information systems in education, three educational system concepts are considered - Management System, Pupil System, and Guidance System. The article suggests that these three be integrated into a Total Information System.

Guertin stresses that it should be educators that plan school information systems, especially in the area of software design.

The task of gathering the data and processing it for an information storage and retrieval system is also discussed.

Herrold, K.F. "Educational Systems and the Storage and Retrieval of Information". Data Processing For Education, vol. 2 (May 1963).

Not available for review.

Miller, W.G. "Selection Criteria for Computer System Adoption". Educational Technology, vol. 9 (October 1969), pp. 71-75.

This article outlines the problems of selection of computer-based systems, and provides a five-section, eighty-two point scale for evaluation, including aspects of cost, performance, and special characteristics. A discussion ensues on the concept of value assignment to the many listed criteria.

4. Micro-Print

Whittenburg, J.A. Guidelines for Planning a Task-Oriented Information System. Alexandria, Whittenburg-Vaughn, 1969. (ERIC Microprint series -- ED 027 925).

This work discusses the general requirements, provides a technical description, and defines the management and administrative functions of such an information system.

Planning Design for Basic Educational Data Systems. (Unsigned), Columbia, S. Carolina Department of Education, 1969. (ERIC Microprint Series -- ED 034 296).

An introduction to the systems approach for handling information is followed by a proposed system for the South Carolina school districts, including data-handling, scheduling, CAI, and simulations.

Among several appendicies is a statement of the philosophy of the South Carolina Board of Education in this respect.

C. COMPUTER-BASED SYSTEMS IN GUIDANCE AND COUNSELLING

1. General Works

Pierce, G.E. Data Processing for Guidance and Counselling. Detroit, Automated Education Centre, 1967.

This is a ring-bound handbook dealing mainly with the analysis and storage of data. It is organized into five chapters, as follows:

1 - A brief explanation of data processing and computers,
2 - A discussion of the services of educational data processing from simple scoring and statistical operations to simulated counselling,
3 - A proposal for an educational data processing system, including hardware, costs, and organization.
4 - A detailed study of "What is data processing", and
5 - A look into the future of educational data processing in guidance and counselling.

2. Monographs

Cogswell, J.F. "An Information Retrieval System for Counselling and Guidance". Automation of School Information Systems, Bushnell, D.D. (ed.), Washington, National Education Association, 1964, pp. 66-69.

This article gives a very brief statement of some of the advantages of introducing information retrieval systems to the guidance and counselling process for purposes of storing and retrieving student record information.

Cogswell, J.F. The Systems Approach as an Heuristic Method in Educational Development: An Application to the Counselling Function. Santa Monica, Systems Development Corporation, 1962.

Not available for review.

Cogswell, J.F. and Estavan, D.P. Computer Simulation of a Counsellor in Student Appraisal and in the Educational Planning Interview. Santa Monica, Systems Development Corporation, 1965.

Not available for review.

Cogswell, J.F. and Estavan, D.P. Explorations in Computer-Assisted Counselling. Santa Monica, System Development Corporation, 1965.

This monograph describes a project on the application of computer techniques to the educational planning function of counselling.

The goals of the project were to explore the possibilities, identify major problems, and define areas for further research. The experimental system attempted to simulate a counsellor's behaviour in: (a) appraisal of a cumulative folder, and (b) planning the fulfillment of educational requirements.

An Experimental Educational-Career Exploration System. (Unsigned), Advanced Systems Development Division - IBM, 1969.

A promotional booklet aimed at the student, suggesting the different avenues of exploration available through the IBM Educational and Career Exploration System (ECES) -- Careers, Areas of Study, and Colleges.

3. Periodicals

Bohn, M.J. and Super, D.E. "The Computer in Counselling and Guidance Programs". Educational Technology, vol. 9 (March 1969(, pp. 30 ff.

Not available for review.

Glaeser, G.A. "A Media System Geared to Closing the Occupational-Information Gap". School Shop, April 1968.

Not available for review.

Goldman, L. "Information and Counselling: A Dilemma". Personnel and Guidance Journal, vol. 46 (September 1967), pp. 42-46.

Goldman discusses the problems presented to counsellors by the information explosion in the areas of college requirements, pupil records, and occupational opportunities. After considerable discussion of the dangers of mishandling and misinterpreting such information, the writer suggests two solutions, either a separation of the information specialist role from that of the counsellor, or a closer unification of these two roles with the assistance of supportive information systems.

Harris, J.A. "The Computerization of Vocational Information". The Vocational Guidance Quarterly, vol. 17 (September 1968), pp. 12-20.

Miss Harris presents a reasonably detailed description, with examples, of her Computerized Vocational Information System. The system is structured upon Anne Roe's two-dimensional job classification and six levels of occupations.

Helm, C. "Computer Simulation Techniques for Research on Guidance Problems". Personnel and Guidance Journal, vol. 46 (September 1967), pp. 47-52.

The possibilities of the use of a computer to facilitate the clarification and testing of counselling theory is discussed, and test interpretations by a psychologist and by a computer are presented and compared.

C. COMPUTER-BASED SYSTEMS IN GUIDANCE AND COUNSELLING

3. Periodicals (cont'd.)

Impellitteri, J.T. "A Computerized Occupational Information System". Vocational Guidance Quarterly, vol. 15 (June 1967), pp. 262-264.

The author describes some novel methods of presenting pupils with occupational information, including audio and video tapes, closed-circuit TV, and slides; and, he describes the weaknesses of the same.

A description of a computer-based system developed by Penn State U. is then presented. Here, students are presented with computer print-outs, audio recordings, and slide projections, computer selected on the basis of the student's GATB profile.

Jones, A.D. "Implications of the Rapidly Developing Computer Technology for Guidance Counsellors". Journal of Business Education, vol. 40 (March 1965, pp. 239-240.

This article is misleadingly titled, and deals only with available jobs at varying levels in the field of Computer Science.

Loughary, J.W., Friesen, D.D., and Hurst, R. "Autocoun: A Computer Based Automated Counselling Simulation System". Personnel and Guidance Journal, vol. 45 (January 1966), pp. 6-15.

Describes the development andinitial testing of a computer-based counselling system which attempted to simulate counselling behaviour in the field of educational planning, for a specific counsellor. The overall results were favourable.

Data regarding pupil attitudes toward the system are included, as well as an example of pupil interaction with the system.

Loughary, J.W. and Tondow, M. "Computers as Substitute Counsellors". Educational Technology, vol. 9 (March 1969), pp. 33-36.

Not available for review.

Minor, F.J., Meyers, R.A., and Super, D.E. "An Experimental Computer-Based Ecucational and Career Exploration System". Personnel and Guidance Journal, vol. 47 (February 1969), pp. 564-569.

Describes the objectives and the design philosophy of the ECES systems experiment. The system consists of three phases -- Vocational Orientation, Educational Orientation, and Post High-School Educational search.

C. COMPUTER-BASED SYSTEMS IN GUIDANCE AND COUNSELLING

3. Periodicals (cont'd.)

Perrone, P.A. and Thrush, R.S. "Vocational Information Processing Systems: A Survey". The Vocational Guidance Quarterly, vol. 17 (June 1969), pp. 255-266.

This article provides brief descriptions of eighteen guidance information systems in development or operation - descriptors include: title, investigators, location, funding, co-operative agencies, available papers, objectives, area and users, and initial cost.

Pierce, G.E. "Data Processing for Guidance". Automated Education Letter, vol. 2 (June 1967), pp. 3-8.

This brief article explains how data processing can help in guidance, and gives a description of what is now being done in the field. A hypothetical counselling system is proposed, based upon Cogswell and Estavan. The system would provide infromation retrieval and automated interviews.

Super, D.E. "Using Computers in Guidance: An Experiment in a Secondary School". Canadian Counsellor, vol. 4 (January 1970), pp. 11-21.

A paper presented at the Fourth International Congress of Education and Vocational Guidance.

A description is provided of the IBM Educational and Career Exploration System, and its high school field test conducted by Teachers College, Columbia University. Considerations for future improvement are also proposed.

Tiedeman, D.V. "The Role of Decision-Making in Information Generation: An Emerging New Potential for Guidance". New Era, vol. 49, (September/October 1968), pp. 224-229.

Not available for review.

Vriend, J. "Counselling Technology: A Needed Conceptualization". Educational Technology, vol. 9 (March 1969), pp. 9-14.

Not available for review.

Vriend, J. "Report of the Harvard Invitational Conference on Computer Assisted Systems in Guidance and Education". Educational Technology, vol. 10 (March 1970), pp. 15-20.

Above named conference held June 22-27, 1969.

The report provides a brief outline and comparison of the Information System for Vocational Decisions (ISVD) and the Educational and Career Exploration System (ECES), such being the central concern of the conference.

C. COMPUTER BASED SYSTEMS IN GUIDANCE AND COUNSELLING

3. Periodicals (cont'd.)

Walz, G.R. and Rich, J.V. "The IMpact of Information Systems in Counsellor Preparation and Practice". Counsellor Education and Supervision, vol. 6 (1967), pp. 275-284.

Not available for review.

"Computer and Counsellor Co-operate". (unsigned), Data Processing for Education, vol. 8 (February 1970), pp. 7-8.

A news report of a company in Don Mills, Ontario, Career Assessment Limited, and its comercially available service of job placement for Canadian university graduates, based upon a computer-comparison technique.

4. Micro-Print

Havens, R.I. Computer Applications in Guidance and Counselling. Oshkosh, Wisconsin State University, 1969. (ERIC Microprint Series - ED 035 925).

A paper presented at the Wisconsin Personnel and Guidance Association Conference, Stevens Point, November 7, 1969.

The paper outlines some of the applications of computer-based systems in guidance, and considers the legal and ethical concerns. Applications presented include: scheduling, student record systems, research, retrieval, and simulations.

Impellitteri, J.T. The Development and Evaluation of a Pilot Computer-Assisted Occupational Guidance Programme. Penn State University, 1968. (ERIC Microprint Series - ED 029 095).

Final project report.

This report outlines the background, objectives, procedures, and experimental results of the Computer Assisted Career Exploration System, developed by Pennsylvania State University.

Conclusions and recommendations are included, along with seven appendices.

C. COMPUTER-BASED SYSTEMS IN GUIDANCE AND COUNSELLING

4. Micro-Print (cont'd.)

Loughary, J.W. Computers as Substitute Counsellors: Some Possibilities. American Psychological Association, 1968. (ERIC Microprint Series - ED 022 228).

A speech presented at the American Psychological Association Convention, San Francisco, August 30 - September 3, 1968.

Loughary proposes three levels of computer-assisted counselling systems; these are:

1 - Tools for information processing
2 - Counsellor controlled systems that perform certain counselling tasks (as well as 1)
3 - Simulated counsellors, including four sub-systems.

Miller, J.V. and Sloan, N.E. Innovations in Personnel Services. Washington, US Office of Education, Bureau of Research, 1970. (ERIC Microprint Series - ED 036 660).

Discusses a wide range of current innovations in the personnel services, including descriptions and examples of twenty-nine types of projects. A section on Computer Counselling Systems is included, describing three types of systems (after D.E. Super), and giving the ISVD project as its example.

5. Government Publications

US Department of Health, Education, and Welfare. Computer Based Vocational Guidance Systems: A Summary of Papers Presented to the Fourth Sumposium for Systems Under Development in Vocational Guidance. Washington, US Government Printing Office, 1969.

An excellent publication in this field.

The presented papers are divided into three parts:
1 - Theoretical considerations in developing vocational guidance systems,
2 - The problems of implementation of such systems, and
3 - Descriptions of some of the major vocational guidance systems under development at that time - 1968.

6. Unpublished Works

Barclay, J.R. Classroom Climate Inventory. (mimeo), University of Kentucky, 1970.

This paper gives an example of an impressionistic evaluation of a child based upon his own self-competency judgements, vocational interests, and peer nominations, as prepared by a computer.

C. COMPUTER-BASED SYSTEMS IN GUIDANCE AND COUNSELLING

6. Unpublished Works (cont'd.)

Barclay, J.R. Measuring the Classroom Social Climate: Some Problems and a Computerized Solution. (mimeo), University of Kentucky, undated.

Barclay gives a background for and a description of his Classroom Climate Inventory which is a computer system designed to receive data from individual self-judgements, peer judgements, vocational knowledge, and teacher appraisals. The system scores the inventories, provides graphic data regarding the children, and writes a report on the impressions derived from the interrelating analysis.

A lengthy description of the ways and means of using this system is given in conclusion.

Mitchell, M.D. Do You Have the Time to Counsel? (mimeo), Concord, Guidance Department, Concord-Carlisle High School, undated.

This paper describes Concord-Carlisle's favourable experience with Boston's Interactive Learning System (1968-69). It concludes that computer-based guidance support systems can facilitate the decision-making process, and do release the counsellor from being a data clerk, and allow him greater time for more humanistic roles.

Minor, F.J. Letter to J.D. Friesen. April 16, 1970.

A brief outline is given of the 1969 spring field test of IBM's Educational and Career Exploration System, conducted by Teachers College, Columbia University in a Montclair, New Jersey high school.

Brief comments are given under three headings: Student-, Counsellor-, and Parental Reactions - all favourable.

Guidance Information System. (mimeo, unsigned), Boston, Interactive Learning Systems, undated.

Briefly describes the founding of the system and its three programmes which are solely based upon multiple-choice selection. Programmes include information on occupations, vocational and technical schools, and colleges and universities.

C-1 ISVD PUBLICATIONS

All items in this section are publications of the Information System for Vocational Decisions (ISVD), being a project under the combined direction of the Harvard Graduate School of Education, the New England Education Data System (NEEDS), and the Newton (Massachusetts) Public School System. The project is funded by the US Department of Health, Education, and Welfare (Office of Education, Bureau of Research), Grant No. OEG-1-6-061819-2240. The actual printed materials are a product of Harvard University, Cambridge, Massachusetts.

These facts of publication will not be repeated.

C - 1 ISVD PUBLICATIONS

1. Annual Reports

Final Report. May 31, 1970.

This report gives a general overview of the entire project, developed under three headings:

1 - Inception of ISVD,
2 - Theory and Design, and
3 - Work Organization and Accomplishments.

Listings are given for all personnel involved in the project, and for all publications arising therefrom. Appendices include a description of the ISVD Product, and outlines of the documentation of the ISVD Datafiles.

Third Report: 1968-1969. October 1969.

Structured as the Final Report.

Under "Theory and Design", much time is spent discussing the questions:

- Can a Machine Counsel?
- Can a Machine Develop a Career?
- Can a Machine Admit an Applicant to Continuing Education?, and
- Can a Machine Educate?

Second Annual Report: 1967-1968. September, 1968.

Structured as the Final Report, but also including plans for the ensuing year.

Under "Theory and Design", three aspects of the programme are outlined:

- The Role of Decision Making in Information Generation,
- Getting a Guidance Machine to Understand English, and
- Data Files for Computerized Vocational Guidance.

Annual Report: 1966-1967. Se!tember, 1967.

Structured as the Final Report, but also including plans for the ensuing year.

Under "Theory and Design", an outline of the entire ISVD approach is given. The System is explained and the use of Data Files and Computer Routines is discussed.

In particular, the Tiedeman-O'Hara vocational decision-making paradigm is established through the definitions of the primary routines of REVIEW, EXPLORATION, and CLARIFICATION, and the outline of expectations of these routines.

The routine MONITOR is also discussed.

C - 1 ISVD PUBLICATIONS

2. Technical Memoranda

Ellis, A.B. and Wetherell, C.S. The Computer and Career Decisions. Undated, Technical Memorandum I.

A technical paper outlining the project's need for a computer facility - the reasoning behind the need, and a general description of the equipment required.

Davis, R.C. Forecasting for Computer Aided Career Decisions: Survey and Methodology. Undated, Technical Memorandum 2.

A brief, symbollic approach to occupational forecasting handled by a system designated as an "I-O Matrix" (Industrial-Occupation).

Hutchinson, T.E. Level of Aspiration and Models Applicable to the Problem of Choice of Career. Undated, Technical Memorandum 3.

This memorandum considers a statistical model applicable to the problem of choice of career. It then explores some of the characteristics, advantages, limitations, and theoretical and practical problems associated with the proposed model.

Wolff, L., Durstine, R.M., and Davis, C. Some Workforce Requirements Implied by Current Manpower Forecasts. Undated, Technical Memorandum 4.

Not available for review.

3. Project Reports

1 Tiedeman, D.V. The Organization and Intention of a Proposed Data and Educational System for Vocational Decision Making. December, 1965.

This report gives a general overview of the project as proposed at its outset. It includes the primary and secondary goals and supportive propositions, the philosophical background of such a system, and the organization of the system.

2 Tiedeman, D.V. An Information System for Vocational Decisions (ISVD): Cultivating the Possibility for Career Through Operations. December, 1966.

An outline of a paper presented to the 1966 Annual Meeting of the American Vocational Association (Denver, December 7, 1966).

Briefly covers the concept, background, and bases of the ISVD system.

C - 1 ISVD PUBLICATIONS

3 O'Hara. R.P. A Theoretical Foundation for the Use of Occupational Information in Guidance. December, 1966.

Not available for review - out of print.

4 Durstine, R.M. Suggestions for Treatment of Information about Occupations. December, 1966.

Outlines thoughts for the treatment of occupational data already gathered. Consideration is given to:

1 - Synthesis - preparing for its use, development, and variation, and
2 - Experimentation, with form and content.

A relationship is developed between system components and modes of operation.

5 Tiedeman, D.V. Self Esteem because of Collegiate Admission and Education. March, 1967.

This is the text of an address presented during the 1967 APGA Convention to a symposium entitled "Self-Esteem: Predictor or Criterion of College Success?" (Dallas, March, 1967).

This paper is not in direct reference to ISVD, but rather a discussion of the same general philosophy upon which the ISVD project is based.

6 Durstine, R.M. Forecasting for Computer Aided Career Decisions: Prospects and Procedures. March, 1967.

A technical paper extending and developing the forms and procedures of forecasting methodology with the eventual aim of combining information from diverse sources, and thus provide forecasts more complete and comprehensive than are now available.

7 Wilson, E.H. A Task Oriented Course in Decision-Making. March, 1967.

Not available for review - out of print.

8 Fletcher, W.J., et al. Toward a Language of Supervision. April, 1967.

A discussion of the Tiedeman-Field paradigm of purposeful action, and the Tiedeman-O'Hara paradigm for decision-making.

9 Dudley, G.A. and Tiedeman, D.V. Recent Developments and Current Prospects in Occupational Fact Mediation. April, 1967.

Not available for review - out of print.

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3. Project Reports (cont'd.)

10 Fletcher, W.J., et al. A Tentative Career Development Curriculum and its Implications for the Patterning of Supervisory Responsibilities in the Information System for Vocational Decisions. May 1967.

An attempt to relate the goals of the ISVD to a tentative curriculum context or Career Development Programme.

11 Ellis, A.B., et al. A Rudimentary Demonstration for the Information System for Vocational Decisions. 1967.

Not available for review.

12 Tiedeman, D.V. The Role of Decision Making in Information Generation: An Emerging New Potential in Guidance. February, 1968.

This paper discusses the three primary data cells of the ISVD, related to educational, military, and vocational opportunities, and the partioning of these data cells as to the Exploratory and Clarification Modes, and the socially induced choice situations within these modes.

Secondary data files and routines are also discussed, with respect to the individual's education and psychological characteristics and his decisional framework.

13 Tiedeman, D.V. Economic, Educational, and Personal Implications of Implementing Computerized Guidance Information Systems. 1968.

Not available for review - out of print.

14 Ellis, A.B., Pincus, M.E., and Yee, P. Getting a Guidance Machine to Understand English. 1968.

This paper outlines the concept of a Guidance Machine, and describes its operation. And, it discusses the significant components of ISVD software, namely, Scripts and Scenarios.

An extensive description is given of the development of the ELIZA script - its keyword section (with decomposition and assembly rules), and its Programme section.

The paper explains how ELIZA exemplifies the Tiedeman-O'Hara decision making paradigm of Review, Exploration, and Clarification.

Extensive examples of student interaction with the ELIZA script are included.

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3. Project Reports (cont'd.)

15 Durstine, R.M. Datafiles for Computerized Vocational Guidance: Requirements, Preparation, Use. May, 1968.

Durstine discusses the concept of datafiles and the fundamental preparation of datafiles. He explains the role of datafiles in ISVD, and gives specifications for the continuing development of datafiles.

16a Tiedeman, D.V. Can a Machine Develop a Career?. July, 1968.

Part I of a paper presented to the Symposium of Perspectives on Vocational Development (St. Louis, July, 1968).

A statement about the process of exploration and commitment in career development.

The paper develops the concepts of what an imitation career is, and what a machine is, and then approaches the question of "Can a machine develop a career?" in the context of three subsidiary questions - Can a machine develop a career for an individual?, with an individual?, or, for itself?

16b Tiedeman, D.V. The Information System for Vocational Decisions: Description, Subsequent Development, and Implications. July, 1968.

Part II of the paper described in 16a.

This portion of the paper describes the ISVD Career Machine, including its datafiles and subroutines, and submits a proposal for its further development. Economic, educational, and theoretical implications are outlined.
An extensive reference list is provided.

17 Ellis, A.B. and Tiedeman, D.V. Can a Machine Counsel? December, 1968.

A paper presented to the CEEB-SSRC Conference on a Computer-Based Instruction, Learning, Testing, and Guidance. (Austin, October, 1968).

Discusses the concept of the Machine as seen by ISVD, and then continues to give an overview of the ISVD system, including an example of a student-machine interaction.

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3. Project Reports (cont'd.)

18 Tiedeman, D.V. The Cultivation of Careers Through Guidance and Vocational Education. January, 1969.

A speech to the Provincial Association of Protestant Teachers (Montreal, November, 1968.)

This paper provides a concept of vocational education and careers, projected to 1980 - an envisioning of Secondary Education, Learning Resource Centres, Education Machines, and Mental Health in 1980.

19 Tiedeman, D.V. Can a Machine Admit an Applicant to Continuing Education?. January, 1969.

Here Tiedeman defines a machine as the procedure it embodies, and an Admissions Machine as that sub-set of procedures in a Career Machine which an applicant and an admissions officer can use collaboratively. He discusses the purpose of admissions to continuing education, and the implications of an admissions machine.

20 Field, F.L. On the Concept of Purpose. April, 1969.

This is not a report on the ISVD project, but rather a three-part treatise on Purpose, in agreement on the underlying philosophy of ISVD.

1 - The Nature of Purposeful Action,
2 - The Evolution of Individual Purpose, and
3 - The Dynamics of Purposeful Action.

21 Yee, P. A Quasi-Annotated Sourcelist for Occupational Forecasting. August, 1969.

A technical paper which brings together the titles and characteristics of a selected set of bibliographic sources and demonstrates a simple but effeetive method for keeping track of such specialized sets of references.

22 Aylmer, R.C., (Jr.). Mediating Student-Computer Interaction: Access Routines in an Interactive Guidance System. November, 1969.

This presentation consists of two parts, the first describing the work accomplished by November 1969, and the second presenting suggested revisions to system components based upon excerpts from the field testing experience.

C - 1 ISVD PUBLICATIONS

3. Project Reports (cont'd.)

23 Yee, P. and Seltzer, J. Description and Use of the Data Files on Military Careers. November, 1969.

This paper summarizes the contents, structure, and possible uses of the ISVD datafile on military jobs in the three major US Services.

A technical paper, dealing with specific data.

24 Durstine, R.W. A Final Report on Forecasts and Data Files. November, 1969.

This paper covers the development and use of the Occupational Title, Occupational Groups, and Military Datafiles. A discussion is presented on the possible development of other datafiles, as well as upon the extension of existing files.

25 Roman, R.A. Implementation of a Career Decision Game on a Time Shared Computer: An Exploration of its Value in a Simulated Guidance Environment. November, 1969.

A brief description of a Career Decision Game, and what such a game can contribute to the understanding of the decision-making process.

26 Roman, R.A. Developing and Implementing Materials for Computer Assisted Instruction. December, 1969.

Here, Roman considers certain important strengths and weaknesses of the development of ISVD in terms of issued within the area of Computer Assisted Instruction. In addition, there is a discussion of a computer language designed to promote effective CAI, and a consideration of the setting and constraints surrounding the development of a computer-based system for guidance.

27 Gannaway, M.T. Changing Prospectives in Education and Self-Corrective Thinking. December, 1969.

Discusses the changing perspectives in education, defines and elaborates upon Self-Corrective Thinking, and considers dimensions critical for correcting assumptions, both about the inner and external world.

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3. Project Reports (cont'd.)

28 Barunch, R. Computer-Assisted Systems in Guidance and Education: Report of an Invitational Conference for the Practice and Education of Counsellors. January, 1970.

This report provides a brief comparison of the ISVD, ECES (Education and Career Exploration System), PLAN (Programme for Learning in Accordance with Need), and ILS (Interactive Learning System) approaches. It outlines some basis issues, the potential, the task, and the implications as related to the Practice and Education of Counsellors.

Some recommendations of the Conference are discussed.

29 Taylor, A. GLURP - Generalized Language for Understanding and Responding to People. January, 1970.

This paper presents a discussion of GLURP as it now exists, including descriptions of how it may be adapted to systems other than the IBM-360 or RCA-Spectra.

It also considers some problems ISVD would have attempted to solve if time had permitted.

30 Yee, P., et al. The Construction and Implementation of a Data Base. April, 1970.

A description of the collection and implementation of data, followed by the preparation of data for entry into the computer and the running of programmes, and finally the script network which will be used to interface the data with the inquirer.

The presented material is relatively non-technical and could guide the reader to the construction of any data base.

31 Roman, R.A. The Script Network: Present Conditions and Suggestions. March, 1970.

A review of each of the better scripts in the ISVD network, with suggestions for improvement.

32 O'Mahoney, T.J. The Self Concepts Profiling Technique: A procedure for the Exploration of Self-Concept Systems. May, 1970.

This is a description of an instrument developed for the profiling of self-concepts, and provides some background in a discussion of the rationale and development of the procedure.

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3. Project Reports (cont'd.)

33 Roman, R.A. A Manual for Glurp: A Computer Assisted Instruction Language. May, 1970.

A Generalized Language for Understanding and Responding to People.

This is an actual programming manual divided into sections for the Beginner, Intermediate, and Advanced programmer.

An excellent instruction manual which could be understood by those having no previous programming experience.

34 Scott, H. Programme Description HASM: Hierarchical Access Storage Management. May, 1970.

A very technical document explaining the storage and access systems of ISVD.

35 Brewster, D. Programme Description DASM: Direct Access Storage Management. May, 1970.

A technical explanation of the direct access system, DASM, including a description of its special features. A brief explanation is given on how to build and use a DASM file.

36. Yee, P. and Madoff, M. The Bigelow Junior High School Field Test. May, 1970.

Part one of this report describes the organization of the field test and summarizes the inquirers' use of the ISVD.

Part two provides case studies for eight of the field test participants.

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